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ABSTRACT

The booklet describes an approach to serving gifted education in low cost enrichment experiences using preservice teachers as mentors. The Mentor-Assisted Enrichment Project (MAEP) at the University of British Columbia has served 105 native English speaking and 20 English as a Second Language students in grades 5 through 7. Students are nominated by teachers, parents, principals, or by themselves. The MAEP has four phases: proposing an enrichment project, agreeing on a final project plan, carrying out the project, and completing and presenting the project. Sample projects, including those on topics related to shoplifting, handicapped athletes, the aerodynamics of flight, sports management, careers in television, computers and their application, and stock market investment are described. The procedures and problems are illustrated. Among benefits of the MAEP cited are lack of expense, enhanced student social/emotional development, and experience in teaching for mentors. Future stress will be placed on identification of the gifted and talented. (CL)

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Challenging the Gifted and Talented Through Mentor-Assisted Enrichment Projects

William A. Gray

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William A. Gray earned a B.A. and M.Ed. from the University of Virginia, and a Ph.D. in educational psychology from the University of Texas in 1970. Since joining the Faculty of Education at the University of British Columbia in 1970, he has developed several innovative approaches for preparing future teachers. From 1971 to 1976, he worked with a faculty team and staff from the Vancouver School System to develop the Open Area Teacher Preparation Program. From 1978 to the present, he has developed and conducted research on a four-phase enrichment model using mentors with gifted/talented elementary students (the subject of this fastback). In 1982-83 he extended this model for use with high school students. From 1979 to the present he has developed an introductory educational psychology course for future high school teachers that is integrated with their initial student teaching practicum.

Gray's research in the area of teacher education has appeared in local, national, and international journals. In addition, he has co-authored with Brian Gerrard two books on field-tested activities that promote experiential learning: *Learning By Doing: Developing Teaching Skills* (Addison-Wesley, 1977) and *Understanding Yourself and Others: A Student Activity Book of Psychological Experiments and Activities* (Harper and Row, 1981).

Series Editor, Derek L. Burleson

Challenging the Gifted and Talented Through Mentor-Assisted Enrichment Projects

By William A. Gray

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Introduction

Today is truly the "best of times" and the "worst of times" for gifted and talented (G/T) students. Best, because once again there is renewed interest in serving these students, who are the ones most likely to lead us in solving the complex problems of the future—an interest similar to that which took place following the Soviet Union's launching of Sputnik in 1957. Worst, because a stagnant economy has created a financial crisis in our schools today, which makes it impossible to fund the specialized programs that G/T students should have in order to develop their special needs and interests.

How can gifted and talented students be served? More specifically, how can school districts provide low-cost enrichment experiences for G/T students during a period of economic retrenchment? How can regular classroom teachers, preoccupied with students with emotional, behavioral, and learning problems, also provide the individual attention G/T students need in order to carry out meaningful enrichment projects that challenge their special talents? How can overworked teachers find the time to arrange field trips and to set up interviews with people in the community and work force for student enrichment projects? How can busy teachers make time to assist G/T students in preparing multimedia presentations for their classmates on what they did and learned in an enrichment project?

Since September 1978, we have successfully addressed these questions at the University of British Columbia in a way that is both educationally sound and low cost. Our program of using preservice teachers as mentors for G/T students in the local schools has provided these prospective teachers with firsthand experience and has given the G/T students a variety of enrichment projects. Benefits redound to both groups.

By working as mentors to G/T students in a one-on-one relationship over a period of 8 to 10 weeks, our teacher education students gained

invaluable experience in learning how to plan and execute enrichment projects for G/T students—experience that will serve them well as they move into teaching positions in the near future. In turn, the G/T students received the individualized attention of an adult as they undertook projects that challenged their abilities—abilities that were often untapped in their regular classroom work.

In this fastback, I shall describe the Mentor-Assisted Enrichment Project (MAEP) as developed at the University of British Columbia and shall suggest that it be considered as a model for cooperative efforts between teacher education institutions and local school districts in serving gifted and talented students.

I wish to thank the two enrichment teachers who have worked with me, Sheila Herman and Douglas Hill, for their cooperation in using preservice teachers as mentors for gifted and talented students. They volunteered to try this rather novel approach in order to provide educationally sound enrichment experiences for their own students and spent innumerable hours helping the mentors.

Mrs. Herman helped me develop the four-phase enrichment model that my preservice teachers use with G/T students and cooperated in conducting research from 1978 to 1982 so that this model could be improved, based on feedback obtained from her students, from parents, and from the mentors.

Mr. Hill extended the MAEP concept to his enrichment program for English-as-a-second language (ESL) students. He arranged numerous videotaped interviews in which his students described their completed enrichment projects. The videotapes can be shown to other students in subsequent years. He also permitted research to be done so that the four-phase enrichment model could be modified for use with ESL students.

Because of my indebtedness to these supportive teachers, I have frequently used "we" and "our" while describing Mentor-Assisted Enrichment Projects in this fastback, for the development of this concept has truly been a joint effort.

I also wish to thank Marilynne Gray, David Rogers, and Ken Pudlas for their help in doing the research on Mentor-Assisted Enrichment Projects.

Using Preservice Teachers As Mentors

From 1978 to 1982, 85 preservice teachers received credit in my educational psychology courses for serving as mentors to G/T students for 8 to 10 weeks. During this four-year period, 105 native English-speaking students and 20 ESL students in grades 5 through 7 have benefited from mentors at an average cost of $20 for each Mentor-Assisted Enrichment Project (MAEP). Such costs were primarily for field trips and for photographs, slides, and other materials that the students used to prepare multimedia presentations that enabled them to share with their classmates what they did and learned in each project.

Each university student who was a mentor had expertise in a particular topic or issue and shared it with one to five students who were interested in studying that topic or issue. The mentors arranged for and took their students on field trips and prepared them to interview people in the community and work force and to use community resources while carrying out their enrichment projects.

Our concept of mentoring is different from tutoring. Tutors remedy diagnosed learning deficits to overcome individual weaknesses. Our mentors build on students' strengths: They challenge them to use higher-level thinking skills in carrying out enrichment projects that develop their personal interests, expand their knowledge, and refine their skills.

The 125 students who worked with our mentors were selected by teachers, principals, and parents, or were self-selected. They had demonstrated above-average intelligence and achievement in the classroom and had expressed a commitment to work on a lengthy 8- to 10-week

enrichment project. These students did not constitute an intellectual elite in terms of high IQ; rather they were chosen because of their perceived potential to carry out a challenging in-depth enrichment project.

The Mentor-Assisted Enrichment Projects began in one elementary school and then expanded to another because the enrichment teachers in both schools found it difficult to fulfill the diverse roles required in helping individual students to carry out individual or small-group investigations of real problems. This is the Type III enrichment activity recommended by Joseph S. Renzulli in *The Enrichment Triad Model: A Guide for Developing Defensible Programs for the Gifted and Talented.*

Specifically, these enrichment teachers (as well as others to whom I have spoken since) said that they had neither the time nor the expertise in varied fields to assist individual students in identifying and delimiting a real problem, to provide ongoing encouragement to the student throughout the investigation of the problem, and to assist each student in preparing a meaningful presentation of his or her project. However, the enrichment teachers were more successful in providing what Renzulli calls Type I enrichment or general exploratory activities and Type II enrichment or group-oriented training activities. But what could these teachers do to provide Type III enrichment? One possible solution was to arrange for G/T students to work with knowledgeable adults in the work force, who would serve as mentors. However, they had reservations as to whether this would work with G/T students in grades 5 to 7.

Since the time of ancient Greece when Mentor educated the son of Odysseus, educated adults in the work force have served as mentors, sharing their knowledge and wisdom with gifted and talented learners. Although some authorities on teaching the gifted have advocated this type of mentor-student relationship, there are several factors that make it difficult to arrange the match between mentor and student.

First, such matches are awkward to arrange administratively. Second, adult mentors in the work force don't always relate well to children and adolescents. Third, these mentors frequently cannot spend the amount of time with a student that is needed for the student to understand the mentor's area of expertise. Fourth, seldom does a mentor in the work force have the time or the skill to help the student prepare a presentation

on what was learned. This type of culminating activity is important in the view of many authorities on educating the gifted.

Recognizing the limitations of using mentors in the work force, our solution was to use preservice teachers. They have the training, which overcomes some of the problems mentioned above; and since they receive course credit for mentoring, they can schedule the time required to serve as mentor for G/T students.

Thus, in 1978, when enrichment teacher Sheila Herman contacted me for suggestions about how to implement a variety of Renzulli's Type III enrichment activities for G/T students in grades 5 to 7, we decided to use preservice teachers as mentors who could and would assist G/T students in planning, conducting, and presenting to classmates an enrichment project based on Type III enrichment activities.

Our positive experience with using mentors with native English-speaking G/T students over three years led us, in 1981, to expand the program to another school where the G/T students were of primarily Oriental heritage with English as a second language. Douglas Hill is the enrichment teacher at this school. During 1982-83, we have expanded the MAEP program to the high school level; 50 to 60 students are working with 30 mentors.

Implementing Mentor-Assisted Enrichment Projects

Successful mentors do not impose their ideas for an enrichment project on students nor do they "take over" the work that the student should do. Our mentors follow the guidelines that we developed during the first year that MAEPs operated. By sharing their personal expertise on a topic and by working with a G/T student step-by-step through the completion of a project, the mentors are able to provide the individual attention that a regular classroom teacher or enrichment teacher cannot readily provide. Following is a brief description of the four phases of the MAEP.

Phase I: Proposing an Enrichment Project

Essential to the success of a MAEP is a compatible match between mentor and student. The matching process begins when prospective mentors submit a written proposal that includes a sequence of interesting and varied enrichment activities in an area of their expertise. Participating enrichment teachers find out students' preferences for these proposed topics and then meet with the university instructor to match available topics with student preferences. Sometimes it is possible to reverse this procedure by first finding out students' interests, and then soliciting mentor proposals that match these interests.

The written proposal gives overall direction to project planning and execution. It spells out what the mentor and G/T student must do each time they meet in order to avoid last-minute pressure on the student to complete the enrichment project in the time allotted. Built into the written proposal is time for rehearsing the project presentation so that it is smooth-flowing, interesting, and informative.

Phase II: Agreeing on a Final Project Plan

During this phase, mentors establish a harmonious working relationship with their students by involving them in making decisions about what the students want to do and how they intend to do it. At their first meeting, the mentors present their proposals but avoid imposing them on the students. The mentors then solicit student reactions and incorporate them into a written plan that the mentors and students mutually agree upon and commit themselves to complete.

Phase III: Carrying out the Project

In carrying out a MAEP, a mentor should not assume that just because a student is "gifted" he or she already has the necessary skills to do what is required (such as preparing good interview questions) or already understands important concepts related to the project. Mentors need to ask appropriate questions in order to ascertain the specific instructional input they must provide and then assign students appropriate homework so that they are prepared for the next scheduled activity. Mentors should periodically review with their students what has been done and learned in order to help them consolidate new learnings and incorporate them into a presentable end product.

If student interest is waning or has turned in an unexpected direction, the mentor should be prepared to revise the remaining schedule of planned activities. To assist students in keeping on schedule we recommend that mentors telephone their students at home a night or two before their next meeting.

During this phase the mentor should guide the student in preparing visual evidence of what was done and learned each week in the form of models, photos, slides, charts, posters, etc. If materials are prepared each week, they easily can be assembled at the end of the project for use in the class presentation.

Throughout Phase III mentors turn in weekly reports telling what has been done and learned and what is planned for the next meeting with their students. The university instructor evaluates these reports and gives photocopies to the enrichment teachers so they will be informed of

the progress of the project. These weekly reports serve to remind the mentors of their responsibility to be prepared for each meeting and to assure that the enrichment project will be completed and presented on schedule. They also serve to document the mentor's developing competency in using appropriate instructional methods and learning activities to promote cognitive, affective, and social learning outcomes.

Phase IV: Completing and Presenting the Project

The mentor's role during Phase IV is to help students organize previously prepared printed and visual materials into a smoothly sequenced, multimedia presentation. This involves rehearsing the students and providing feedback so that their presentation to their classmates is interesting and informative. Sometimes mentors need to demonstrate how to give a good class presentation.

Other Kinds of Support Needed

The principal's support is essential in communicating to staff and parents the advantages of having a mentor work with their children and in obtaining parents' permission for unusual field trips (e.g., one of our mentors took his student flying, accompanied by the student's grandfather.) Principals must also make funds available for the materials—slide film, poster paper, etc.—that will be used for the students' multimedia class presentations.

Successful MAEPs require the support of other key people. The enrichment teacher must obtain the cooperation of the regular classroom teachers whose G/T students are working with a mentor. Sometimes these students will have to be excused from regular classes in order to meet mentors at a time that fits the university schedule of courses.

The enrichment teacher and the mentors must be prepared to spend additional time at school or on the telephone resolving unforeseen problems and obtaining needed resource materials. The university instructor must spend extra time helping prospective mentors to prepare their written proposals for enrichment projects and then to revise them into a

manageable 8- to 10-week plan of interesting enrichment activities. The instructor must also give feedback on each mentor's weekly report and work cooperatively with the enrichment teacher in supervising the mentors.

Are Mentor-Assisted Enrichment Projects really worth this much time and effort? We think so, and hope you will, too, after reading the 12 examples described in the next section.

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Mentor-Assisted Enrichment Projects: Learning in Action

During the period 1978-1982, we have conducted 85 Mentor-Assisted Enrichment Projects. In this section, we briefly describe 12 MAEPs to show the variety of projects undertaken and the resulting learning for the G/T students involved. The last MAEP described is included to show what can and did go wrong with one project involving ESL students.

1. "Shoplifting and the Law"

This project involved five students whose mentor worked in a large department store as a security guard in order to earn money to attend the university.

The mentor first had the students read legal cases involving shoplifting violations and then debate what society would be like without such laws. This activity immediately got students emotionally involved in the topic. The mentor felt this emotional involvement was especially important at the outset, because one of the goals of this particular project was to discourage some of these very students from "ripping off" merchandise at the corner grocery store across the street from the school.

Next, a police officer was invited to school to discuss his role in a shoplifting case and to answer students' questions based on their previous reading and debate.

The following three meetings were field trips. The students visited the department store where the mentor worked to observe what a security guard does—from observing a suspected shoplifter to apprehending one. Then they went to a jail where they watched an apprehended

shoplifter being fingerprinted. Finally, they visited a court to observe a shoplifting case being prosecuted. During each field trip, students asked questions, which the mentor had helped them prepare beforehand. The answers they obtained would be used later in their class presentation.

The class presentation consisted of a variety of activities that not only provided useful information but also were designed to influence the attitudes of classmates toward shoplifting. The five students dramatized what happens to a shoplifter from the time of apprehension to conviction in court. They also created realistic Kohlberg-type "moral dilemmas," concerning whether or not to shoplift, for their classmates to discuss.

Especially impressive was the five students telling their classmates how the various activities they did during this project caused them to stop wanting to "rip off" even the corner grocery store; they had come to realize that this was actually shoplifting.

2. "Investigating the Chinatown Area of Vancouver"

This project involved an Oriental boy whose parents had recently immigrated to Vancouver. This sixth-grade boy was primarily interested in finding out if other children of recent immigrants were experiencing the same kinds of frustrations he was in trying to abide by the wishes of his parents in maintaining their Oriental customs (e.g., speaking Cantonese) while also doing the things that other Canadian boys his age were doing (e.g., speaking English, playing ice hockey, soccer, and other sports).

Because few Oriental students attended this boy's school, the mentor arranged a variety of field trips to enable him to find out firsthand about the history of the Chinatown community on the other side of town and about the children living there, many of whom were also adjusting to becoming Canadians.

For his field trips to Chinatown, the boy prepared questions to use in interviewing people there to find out when and why they came to Canada and how well they enjoyed living in Chinatown and in Canada. He also took photographs for later use in his class presentation and for his personal use.

Next, the mentor took the student to the Vancouver Archives and to the university library to review materials that would give him a historical perspective about the development of Chinatown, including an awareness of the racial bigotry toward Orientals during the early days when they were brought to Canada to build the national railroad. With guidance from his mentor, the boy used this background information to put together a questionnaire for Oriental boys and girls his age who were also new Canadians. On a Saturday, the mentor took the boy to a community center in Chinatown where he gave questionnaires to a group of young people to find out how they were adjusting to Canada while still maintaining their cultural heritage.

The boy tabulated the data from the questionnaires and made a graph of his findings. He presented this information to his classmates along with what he had learned about the historical development of Chinatown, the contributions of Oriental people to the development of Canada, and the gradual elimination of racial prejudice toward people of Oriental heritage.

Perhaps the most significant outcome of this project for the boy was that he learned to accept himself as a new Canadian of Oriental heritage.

3. "Handicapped Athletes"

The motivation of the two students doing this project came from their reading about Terry Fox, the cancer-stricken young man whose attempt to run across Canada inspired millions of Canadians to donate over $25,000,000 for cancer research. They began by identifying famous handicapped athletes and the special associations that sponsor athletic events for them.

The mentor arranged for the students to visit the home of Rick Hansen, winner of many Olympic Gold Medals. They interviewed him and watched him work out on several specially designed wheelchairs used by handicapped people for basketball and races. Rick invited the students to attend a wheelchair basketball game; and they had an opportunity to play wheelchair basketball. The mentor also took the students to watch and play in a game of goalball, a soccer-type game for blind athletes.

The mentor prepared the students to conduct interviews with the athletes at these two events. The information from the interviews was used during the class presentation. The students also demonstrated goalball and provided their classmates the opportunity to play blindfolded in order to experience what it is like to play a competitive sport without the aid of sight. This experience (plus learning more about Rick Hansen, who is frequently seen on television doing commercials) helped all the students improve their attitudes toward handicapped athletes in particular and handicapped persons in general.

4. "The Aerodynamics of Flight"

The seventh-grade boy in this project began by reading textbooks to gain an understanding of how lift and drag result from high and low pressures around the wing. Then, with the assistance of his mentor, the student designed and constructed a wind tunnel and a model airplane with interchangeable wings to demonstrate aerodynamic principles. He also studied diagrams of the instrument panel in airplanes.

Toward the end of the project, the mentor took the student and his grandfather flying in a small Cessna. The student took slides of the instrument panel and interviewed the pilot to find out how he was trained and why he liked flying small airplanes.

The slides, the information from the interviews and readings, and a demonstration of the principles of aerodynamics using the wind tunnel and model airplane wings served as the basis for the student's presentation to his classmates.

5. "Sports Management"

This project provided the opportunity for a sixth-grade boy to investigate his favorite sports team—the Vancouver Canucks ice hockey team.

The boy's mentor was one of our university's best athletes. She helped him to write letters to request interviews with the Canucks' general manager, coach, trainer, director of publicity, and key players, as well as with Babe Pratt, a Hall-of-Famer who broadcasts the Canucks'

games on national television. She also prepared the student to tape-record interviews with each of these people.

The boy attended a Canucks' practice session. Afterwards he interviewed some of his favorite players to find out how they improved their skills, and he took photographs of the Canucks' key personnel.

The interview information, which was later displayed on posters, the photographs, and a flow chart of the organizational structure of the Canucks' team, were used in the class presentation. The flow chart was especially useful in answering classmates' questions concerning who has responsibility for making certain decisions in the management of a professional hockey team.

6. "Careers in the Television Industry"

A mentor with experience in television shared her expertise with an interested sixth-grade girl in this enrichment project. After preparing and rehearsing interview questions with her mentor, the student visited a local TV station (CKVU) to interview various persons concerning their jobs, why they chose them, why they liked them, etc. The student took photographs of each person at work; she later mounted the photographs and information from the interviews on posters.

Next, the student and mentor watched a two-hour program that was being televised live and took slides of this for the class presentation. For a homework assignment the student used her newly acquired knowledge to write a script that described each person's job while televising a live program.

The class presentation included all the things mentioned above plus the student's analysis, based on what she had learned in this enrichment project, of why she wanted to pursue a career in the television industry. Some classmates also became interested in possible careers in television as a result of her presentation.

7. "A Survey of Computers and Their Applications"

In this project the mentor and two students, who were already somewhat knowledgeable, took seven field trips to observe various ap-

plications of computer technology and to interview people about various computer-oriented careers.

During several visits to the University of British Columbia, the students tried out various computer programs (e.g., "Apple Writer," LOGO, and BASIC) as well as the "graphics tablet" with Apple II and CORVUS computers. The mentor also showed the students how to use "canned programs" such as MTS with the "mainline computer" in order to analyze data input from a "batch run." In addition, students observed computer applications in astronomy, mathematics, and TELIDON, and interviewed people about their careers and about future career possibilities in these areas.

The students' visit to the Tri-Universities Meson Facility (TRIUMF) underscored the importance of computer technology in today's world. They saw over 200 micro-processors and computers of various kinds working together to make it possible to do meson research in the areas of medicine and subatomic physics.

During the class presentation, to illustrate what they had learned about computer applications, the two students showed slides of places they had visited. They had also borrowed a "components board" and micro-chips for their display, and they described how these are used in the design of micro-computers and large computers.

8. "Investing in the Stock Market"

This project began with the mentor teaching a sixth-grade girl key concepts in investing (e.g., selling short, buying futures), how to read stock market listings in the newspaper, and how to buy potentially valuable stocks.

To provide motivation throughout the project, the mentor guided the student in "investing" $25,000 in Monopoly money in an actual stock listed on the Vancouver Stock Exchange (VSE). The stock was chosen by the student for its earning potential. Throughout the project, the student graphed the stock's actual gains and losses as reported each day in the newspaper.

The mentor took the student to the VSE several times so that she could actually see how trading takes place and could interview different people about their functions.

The student took slides of various people working at the VSE and also sketched its floor plan so that she could make a three-dimensional model to illustrate what takes place during trading and where things like the "big board" are located.

Later the mentor took the girl to visit a leading brokerage house. There she interviewed a successful stock broker and learned how "mass psychology" affects the buying and selling of stocks. She also learned that she had chosen a good stock to invest in because of its past record of earnings and present performance.

The girl's classmates especially appreciated the model she used while describing what various people at the VSE do during the trading of stocks. The fact that the student actually made money on her $25,000 "investment," according to her graph of gains versus losses, stimulated much discussion about stocks long after this project was over.

9. "The Arch in Architecture"

The highlight of this project was the interview the mentor arranged for a seventh-grade boy with Arthur Erickson, an internationally acclaimed architect. To prepare for this interview, the mentor took the boy to photograph several major buildings designed by Erickson so that he could ask specific questions about each design.

Motivated by this interview and by the knowledge he had gained, the student carried out an in-depth investigation of how different styles of arches made possible new architectural designs in various types of buildings throughout history.

The mentor took the student to photograph buildings having different styles of arches. The mentor also helped him to analyze the influence of a particular style of arch on the buildings of a particular historical era, such as the coliseums of Ancient Greece and Rome, the great cathedrals of Medieval Europe, and other buildings, leading up to modern domed stadiums.

The student presented this information to his classmates in the form of models he had made of various types of arches, his photographs, and pictures of famous historical buildings that used each type of arch. His classmates were especially interested in seeing photographs of the

famous buildings designed by Arthur Erickson and in learning how he decided upon a particular design for a particular building.

10. "Jogging: How and Why?"

Because of their interest in keeping fit, two boys did this project with a mentor who was himself an avid jogger. First, the mentor took the boys to interview a qualified salesperson, who pointed out the distinguishing features of proper jogging shoes and told why they should be worn instead of other kinds of footwear. The salesperson gave the students advertisements showing different types of athletic footwear—and an actual cross section of a proper jogging shoe. Later they would use these visuals during their class presentation to point out the distinguishing features of each type of shoe. The students also purchased proper jogging shoes, which they wore thereafter while jogging.

Next, the students read about and viewed a movie on the training methods used by competitive joggers. They incorporated these methods into their own jogging program, which the mentor helped them start; and they recorded their daily progress in "jogging diaries."

To understand the effects of jogging upon the human body and mind, the boys interviewed a successful marathon runner and read about "addiction to jogging." This enabled them to understand how a biochemically-induced "emotional high" can result from jogging and how "emotional depression" can result from failure to jog.

The highlight of this project for these two students was building up their endurance so that they could run a specially designed marathon and almost keep up with their 6'2" mentor. From the mentor's point of view, the most significant outcome of the project was that both students continued with their jogging program after the project had officially ended. Moreover, their commitment influenced classmates to begin jogging regularly.

11. "The Roadblock Issue in Civic Politics"

This project dealt with an issue so controversial that it still has not been officially resolved.

The project began by having a seventh-grade girl and boy understand how a controversial issue is resolved according to what textbooks say about the political process compared to what actually takes place at City Hall and at City Council meetings.

After interviewing the mayor and observing a heated City Council meeting, the students decided to investigate whether or not temporary (or permanent) roadblocks should be erected in the exclusive Shaughnessy neighborhood. Residents of this neighborhood demanded that road barriers be erected to prevent drivers in over 3,000 cars per day from using Shaughnessy's residential streets as a short cut to a main thoroughfare on their way to and from work.

Motorists not living in this neighborhood strongly protested the erection of even temporary roadblocks. They attached "Ban the Barriers" bumper stickers to their cars, drove onto sidewalks to evade the barriers, and actually removed them at times (which was not easy since the barriers were made of concrete).

The mentor helped the students prepare a survey they would conduct house-to-house in Shaughnessy for the purpose of finding out if residents believed the barriers were actually working, if they should be removed, or if they should be made permanent.

During the class presentation the students used transparencies to share their survey findings. They showed a videotape of motorists driving onto sidewalks to evade the barriers at seven different locations. Alderwoman May Brown provided the highlight of their presentation by giving the background of this ongoing controversy, stating why the Vancouver City Council had decided to authorize the erection of temporary roadblocks, and discussing what the future decisions might be and why. The two students, with occasional comments from Brown, traced on a flow chart the actual steps and departments through which this issue had gone and would continue to go if the barriers were to be erected permanently in Shaughnessy.

12. "A Comparison of Different Kinds of Horses"

This last MAEP is described to indicate some of the problems that can arise because of the different cultural backgrounds of the mentor

and the students involved, in this case a Caucasian mentor and two Oriental immigrant girls.

Previously, two Canadian-born sixth-grade students had done a similar enrichment project on horses and had found it thoroughly enjoyable and interesting, especially going horseback riding and grooming horses. In contrast, the two Oriental girls found the field trip components of the project so frightening that they were reluctant to continue the project even though the mentor's wife, who was an experienced equestrian, frequently accompanied them on field trips, and even though one field trip involved watching the mentor's mother assist in the foaling of a horse on her farm.

In spite of these enrichment experiences, neither the mentor nor the enrichment teacher was ever fully able to allay these girls' fears about going on field trips. The girls began to be absent from school on those days when the mentor was to pick them up to take them on field trips. Phone calls to the students the night before field trips proved futile. So did phone calls to the Cantonese-speaking parents, who were unable to understand the mentor's request for their support.

It wasn't until we conducted interviews with these two girls and other students at the end of the year that we found that the girls' strong fear of the unknown—of horses in particular and of field trips in general—influenced them in participating willingly in academic aspects of the project at school but avoiding the more venturesome field trips. Our plans to remedy this in the future are discussed in the last section of this fastback.

Benefits of Mentor-Assisted Enrichment Projects

The 12 MAEPs described in the previous section illustrate how G/T students can be challenged to undertake a wide variety of enrichment projects in ways that use their talents and creativity. The author and the two enrichment teachers see six major benefits of MAEPs and of using preservice teachers as mentors for these students.

First, MAEPs provide an inexpensive means of enabling G/T students to pursue an in-depth investigation of a real problem or topic of personal interest to them. Preservice teachers in the role of mentors have the time and expertise to assist individual students in carrying out an enrichment project of some 8- to 10-weeks duration. Most schools simply do not have the staff to provide such intense and individualized supervision of G/T students.

Second, MAEPs expand students' cultural awareness and experiential background through field trips arranged by the mentor. This is especially beneficial for ESL students, who as recent immigrants are often reluctant to venture out of the familiar community in which they live.

Third, MAEPs help students develop their oral language facility as they prepare, rehearse, and then conduct interviews with various people in the work force and community; as they discuss with their project partner how they will present to classmates those things they did and learned during the project; and as they rehearse and then give a class presentation. ESL students especially benefit from these oral language experiences.

Fourth, MAEPs foster students' social and emotional development by enabling them to gain confidence from interviewing strangers during field trips, from giving a class presentation, and from learning how to

work together cooperatively, sometimes leading and sometimes supporting their partner.

Fifth, MAEPs provide real-life opportunities for students to develop and use high-level thinking skills and to internalize values and attitudes from their experiences throughout the enrichment project.

Sixth, MAEPs enable preservice teachers who serve as mentors to develop such basic teaching competencies as: doing long-range planning, learning how to ask high-level questions, providing direct instruction when necessary, providing for discovery learning when appropriate, arranging for hands-on enrichment experiences, planning field trips, preparing students to conduct interviews, assisting students in using multimedia materials, and rehearsing students in making interesting and informative presentations. In addition, by serving as mentors for 8 to 10 weeks, preservice teachers gain firsthand knowledge of the characteristics of G/T students in a way that they could never learn from reading textbooks on the gifted and talented. Indeed, several of our mentors have decided to take additional courses and degrees in order to become full-time enrichment teachers when they start their professional careers.

Benefits Reported by English-speaking Students

In a 1980-1981 study of the MAEP concept, we found that students in grades 5 to 7 used significantly more community resources and people in the work force while doing their MAEP (because their mentors arranged for it) than they themselves could arrange while doing a Self-Directed Enrichment Project (SDEP). These G/T students also completed and presented significantly more Renzulli Type III enrichment projects (see bibliographic entry) while working with a mentor than they did while working independently.

When asked to compare the MAEP with the SDEP they had done, these students consistently rated the MAEP as superior. They said they became more interested in doing the MAEP as they worked on it and wanted to complete it more than the SDEP, even though there was no difference in preference for either type of enrichment project before they actually started working on it.

They also said they put their best effort into doing the MAEP and did a better job of presenting it to classmates, even though there was no difference in the amount of time spent outside of school doing either type of project.

One factor contributing to the positive student reactions to MAEPs is that students take more responsibility for doing this type of enrichment project. Further, MAEPs were better planned each week; students knew what to work on. This, in turn, led to more MAEPs being completed on schedule and to the student's personal satisfaction. And MAEP students seemed to develop a more positive self-concept as they learned how to ask questions of adults in the community.

Whether students did a MAEP before doing a SDEP, or vice versa, they said they overwhelmingly preferred doing a MAEP. One benefit for those students who did a MAEP first is that they gained enough confidence to want to do a subsequent enrichment project on their own, as the following comments from two students indicate:

> I think a person should do a mentor project because they are a lot of fun, but also a lot of work. Though I said that I would do a mentor project again . . . I think after the mentor project, the person should try a self-directed project.

> I would recommend a mentor project to a friend because I think a good mentor prepares the student to do his or her own project better by themselves. Now I would like to do a self-directed project.

Benefits Reported by ESL Students

In a 1981-1982 study of the MAEP concept, we conducted interviews and administered questionnaires to 20 ESL students after they had given their class presentations. These sixth- and seventh-grade students said they could not have done the project they did without their mentor's assistance, even though 18 of the 20 students had the assistance of a partner. Out of these 20 ESL students, 20 said they had become more self-confident as a result of working with a mentor, 16 said they had learned to cooperate with their partner, 18 said they had learned to prepare a presentable end product, 16 said they had learned how to give a good

class presentation, 17 said they had become less shy, 15 said their speaking skills had improved, 17 said what was done at each meeting was beneficial to them, and 19 said they had become more interested in the topic than they were before beginning the MAEP.

On the other hand, some of these students said that their mentors had failed to provide enough ongoing encouragement, failed to challenge them to pursue their own interests, and failed to provide learning experiences and resources that kept them actively involved throughout the project. Consequently, these students rated their mentors and the MAEPs significantly lower than did students whose mentors succeeded in these areas.

In conclusion, we have found from our evaluation of the MAEP concept since 1978 that G/T students benefit from working with a mentor if the mentor follows the four phases presented on pages 12-14.

Future Directions

Our experience with MAEPs since 1978 leads us to believe that this concept provides an effective way of challenging gifted students. Careful evaluation over a four-year period, with input from mentors, enrichment teachers, and students, has provided useful information for improving the program. Following is a summary of recommendations that we shall incorporate into our future plans.

Mentors said that they need guidance in knowing how to "read" student reactions to determine whether they are benefiting from doing the project. They also want help in encouraging students to have a greater input in planning and carrying out the project. And they want to do a better job of assuring ESL students and their parents that field trips outside of their local community (e.g., Chinatown) are not frightening but are beneficial and enjoyable.

To meet these needs expressed by the mentors we are introducing a "cultural unit" on how to work with Oriental ESL students as an important part of the mentors' training. This unit will prepare mentors to fulfill parents' high expectations for academic excellence and to learn better ways of motivating ESL students to go on field trips that will expand their cultural awareness.

We shall encourage ESL students to discuss their MAEP projects among themselves in order to allay new ESL students' fears about working with a mentor and about going on field trips outside their community. During small-group interviews with these students, many of them became aware that they were not alone in their feelings of fear of failure and fear of going on field trips. After openly sharing these feelings, they

agreed that they wanted to do another MAEP to improve their first effort and also because they still felt uncertain about doing a self-directed enrichment project entirely on their own.

Douglas Hill, the enrichment teacher for ESL students, plans to show parents videotapes of students giving class presentations and displays of other completed MAEPs so that the parents will encourage their children to go on field trips and then present to classmates what they did and learned. Sheila Herman, the other enrichment teacher, has obtained excellent parental support for MAEPs since she began using videotapes and displays in 1979.

To inform new mentors and students about what a MAEP entails from the beginning to the final class presentation, we shall show videotapes of students presenting their completed projects to classmates. Also, we shall provide additional visual examples by displaying the end products made by MAEP students.

Many G/T English-speaking students and most ESL students reported nervousness over giving their class presentations. Therefore, mentors will provide more assistance to their students by planning rehearsals before small groups of four to six classmates. Where possible, the mentors will view videotaped playbacks of these rehearsals and provide a critique so that the students can improve their presentations before giving them to the whole class.

In the future, the author and the participating enrichment teachers intend to give more attention to identifying the gifted and talented and to clarifying to the mentors how we define this group of students. Mentors need to understand that the students with whom they are working are not necessarily the top 1% to 3% based on IQ tests; rather they are more likely the top 10% to 20%, and often need special instruction and direction from their mentors. In the past, about 25% of the mentors mistakenly assumed that their students were so gifted that they did not need any direction or instructional input from the mentor. Students typically gave these mentors and the end products resulting from their enrichment projects a lower rating on evaluation questionnaires administered after the class presentations were given.

After four years of experience with Mentor-Assisted Enrichment Projects, and with continuous improvements over that period, we feel

confident that MAEPs provide a workable and educationally sound approach for working with the gifted and talented.

Will Mentor-Assisted Enrichment Projects work in your school system? We think so based on our results thus far. We invite you to discover the answer for yourself. Whether you are a preservice teacher looking for a way to make a real difference in the lives of tomorrow's leaders, or a teacher educator looking for hands-on field experiences for your preservice students, or a classroom teacher looking for a way of providing low-cost, individualized enrichment experiences for your G/T students, the personal satisfaction you will gain is perhaps best expressed by the comment below from a father of a MAEP student.

> My child's mentor is an outstanding individual as a teacher and a leader. Before the mentor project, my child had developed a very strong BORING-BORING-BORING attitude. The mentor project reversed this in a matter of days. Here is a case of something that neither parents nor teachers, regardless of reasonable effort, can seem to change. It seems to me that university student mentors have a unique ability to influence youngsters in a very positive way. Keep up the good work.

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